National Institute of Environmental Health Sciences

The effect of the 1995 heat wave in Chicago on all-cause and cause-specific mortality

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Abstract:

OBJECTIVES: We sought to reexamine the effects of the 1995 Chicago heat wave on all-cause and cause-specific mortality, including mortality displacement, using advanced time-series analysis methods. METHODS: We used Poisson regression with penalized regression splines to model excess mortality and mortality displacement over a 50-day period centered on the day in which the heat wave temperature peaked, adjusting for meteorological and other variables. We controlled for temporal trends by using daily mortality data during 1993-1997. We estimated relative risks (RRs) with reference to the first day of the 50-day period. RESULTS: We estimated that there were 692 excess deaths from June 21, 1995, to August 10, 1995; 26% of these deaths were owing to mortality displacement. RR for all-cause mortality on the day with peak mortality was 1.74 (95% confidence intervalEuro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin)1.67, 1.81). Risk of heat-related death was significantly higher among Blacks, and mortality displacement was substantially lower. CONCLUSIONS: The 1995 Chicago heat wave substantially effected all-cause and cause-specific mortality, but mortality displacement was limited. Mortality risks and displacement affected Blacks disproportionally. Appropriately targeted interventions may have a tangible effect on life expectancy.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1854989

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Temperature

Air Pollution: Interaction with Temperature, Particulate Matter

Temperature: Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

Freshwater, Urban

Geographic Location:

resource focuses on specific location

United States

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Morbidity/Mortality

Cardiovascular Effect: Other Cardiovascular Effect

Cardiovascular Disease (other): cardiovascular mortality

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Elderly, Racial/Ethnic Subgroup

Other Racial/Ethnic Subgroup: Black

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified